

lab5_color.R

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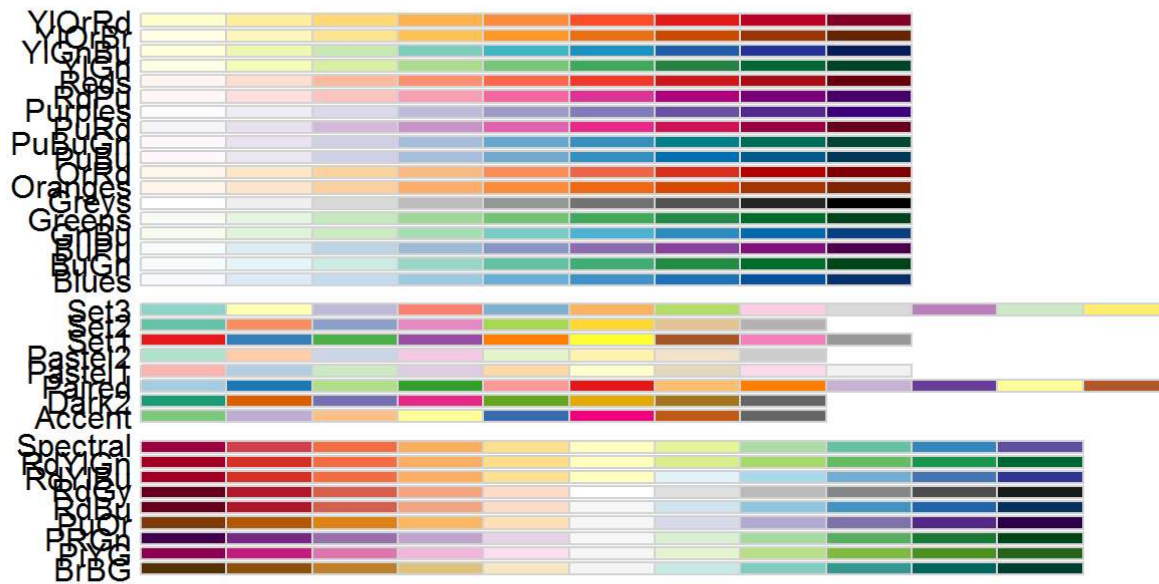
```
#  
#Author: Suchitra Deekshitula  
#Purpose: Lab5  
#  
  
data.fname = file.choose()  
sales = read.csv(data.fname, header = TRUE, stringsAsFactors = FALSE)  
dim(sales)
```

```
## [1] 10000    14
```

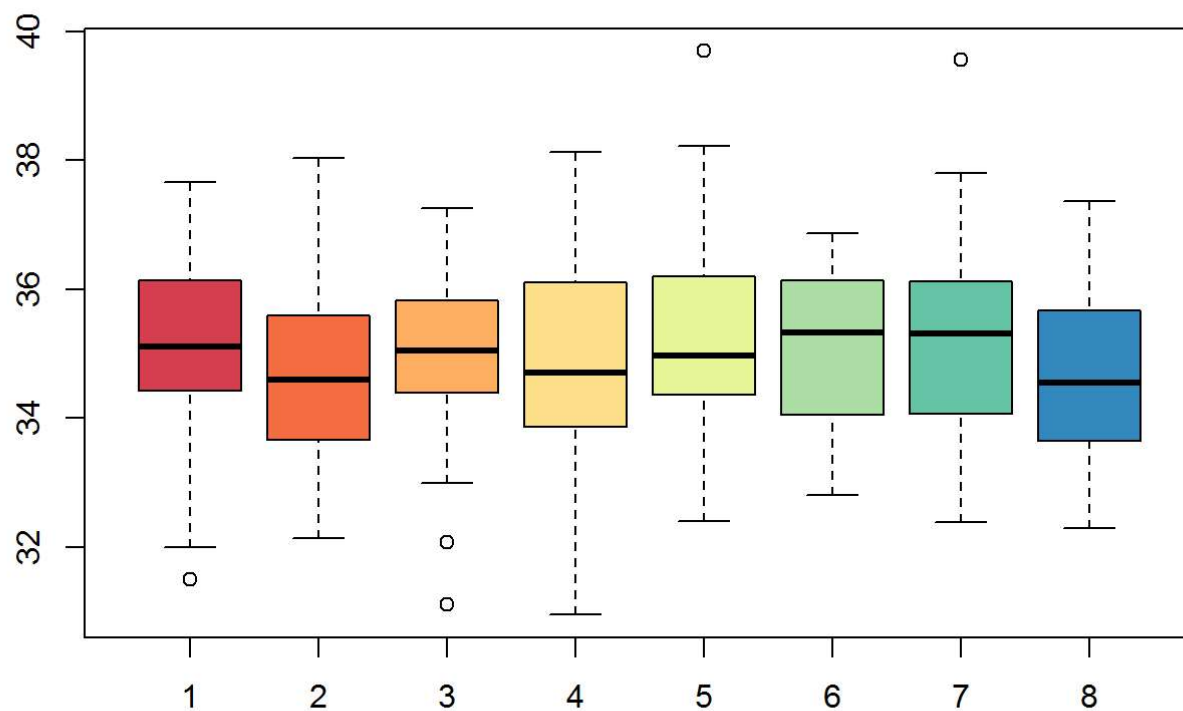
```
library(RColorBrewer)
```

```
## Warning: package 'RColorBrewer' was built under R version 3.3.2
```

```
display.brewer.all()
```

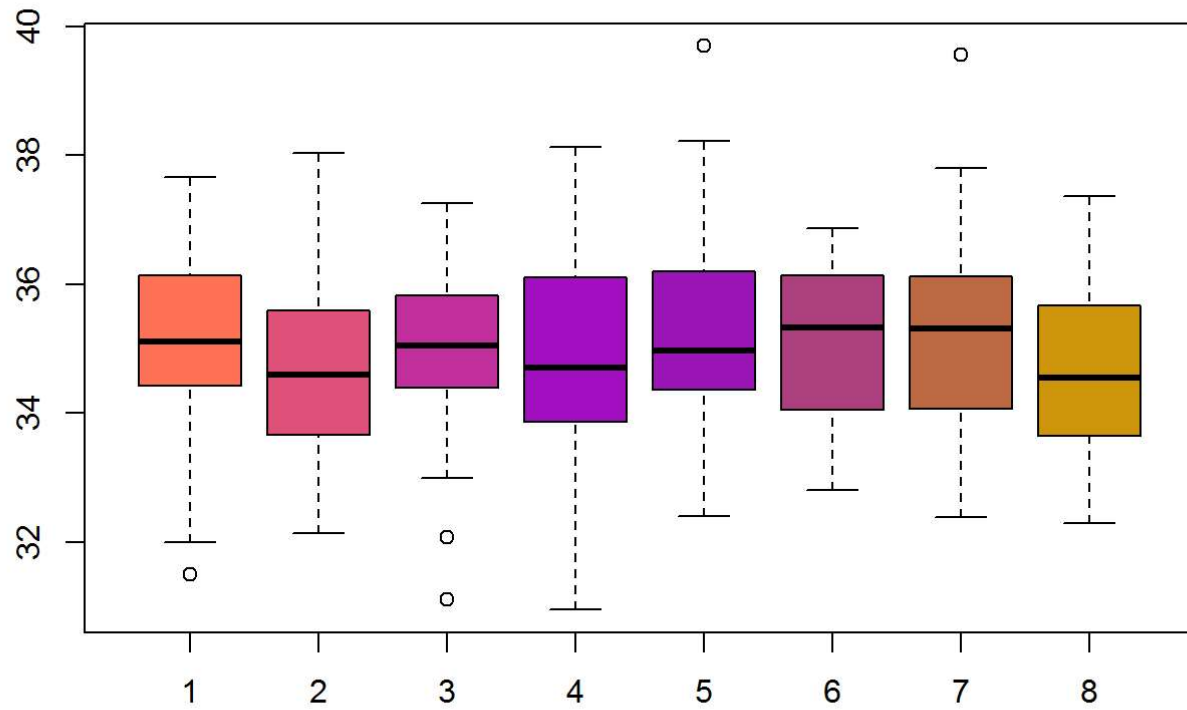


```
rand.data = replicate(8,rnorm(35,35,sd=1.5))
boxplot(rand.data, col=brewer.pal(8,"Spectral"))
```

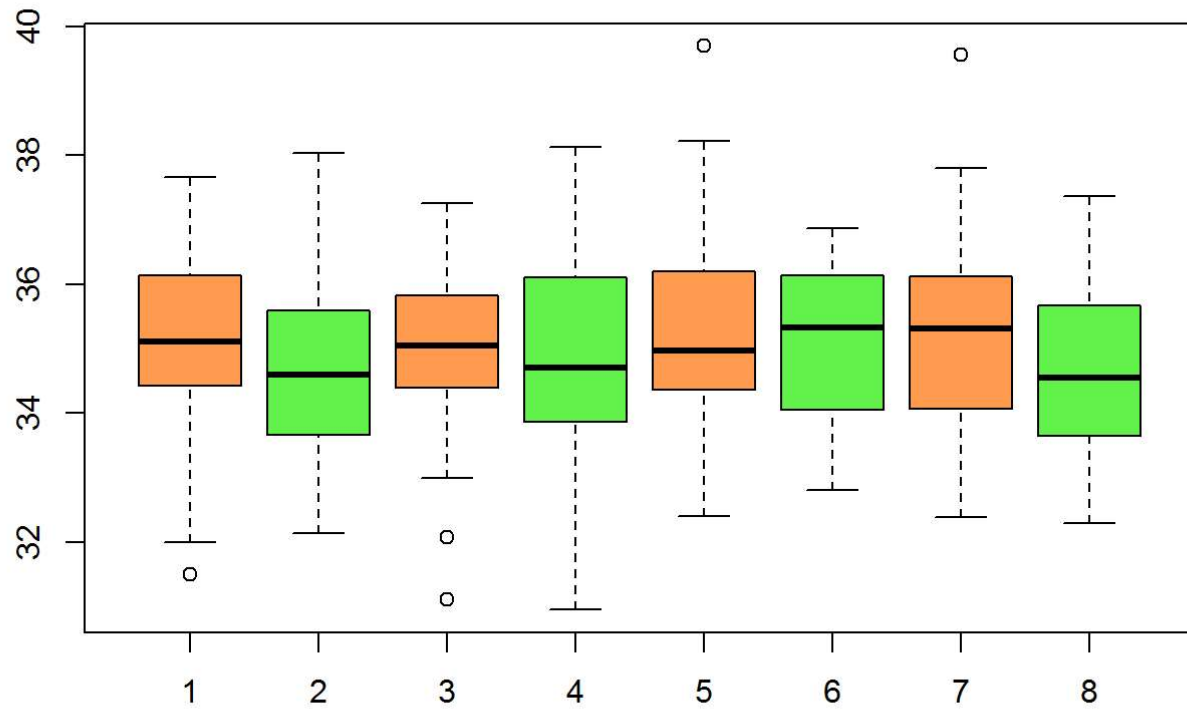


```
num.colors = 8
my.FUN = colorRampPalette(c("coral1","darkviolet","darkgoldenrod3"))
#give anything from 2 to n number of colors

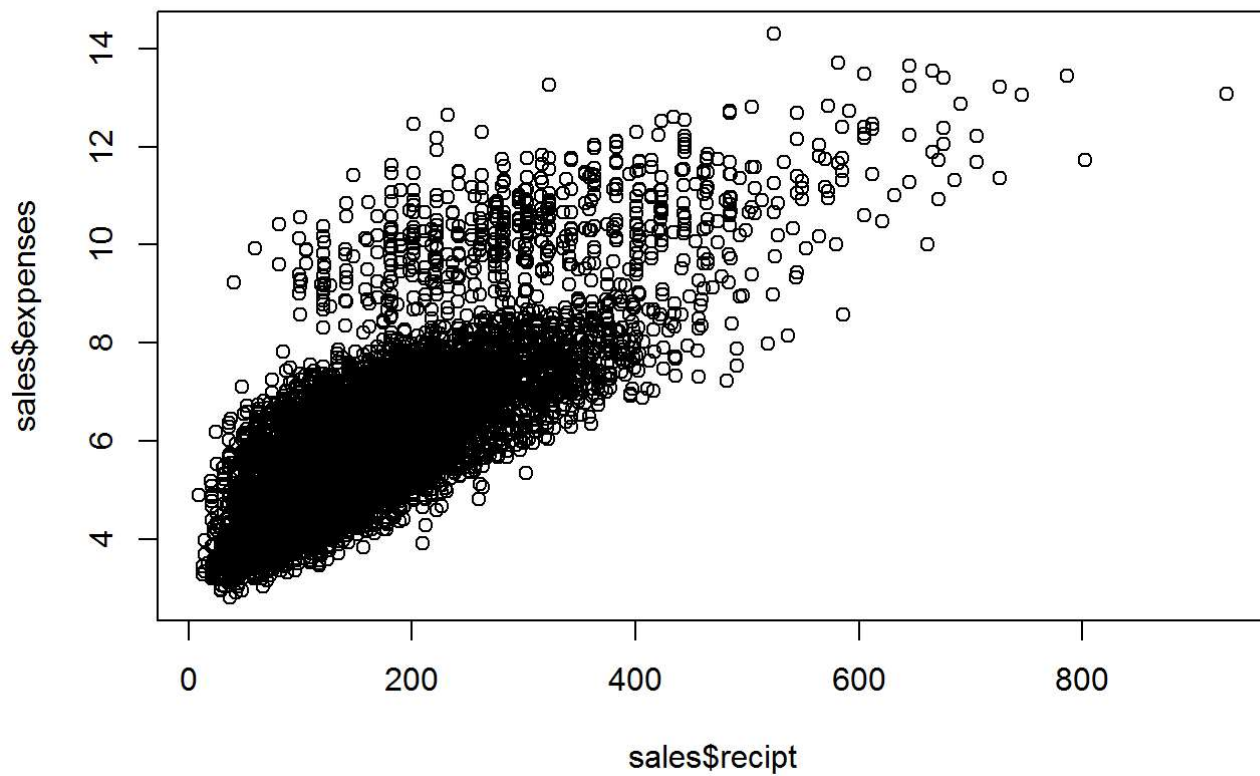
my.cols = my.FUN(num.colors)
boxplot(rand.data, col = my.cols)
```



```
col.1= rgb(255,154,79,maxColorValue=255)
col.2= rgb(98,242,75,maxColorValue=255)
boxplot(rand.data, col=c(col.1,col.2))
```



```
plot(sales$receipt, sales$expenses)
```

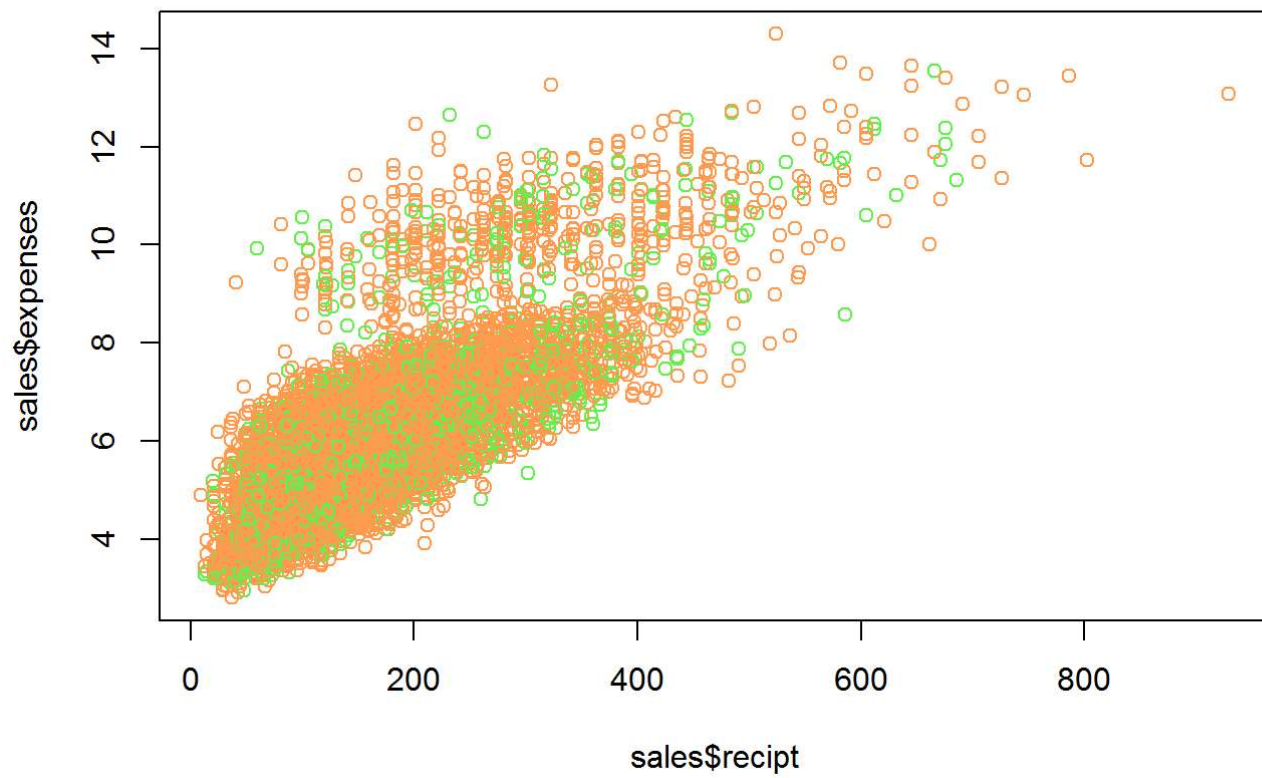


```
colnames(sales)
```

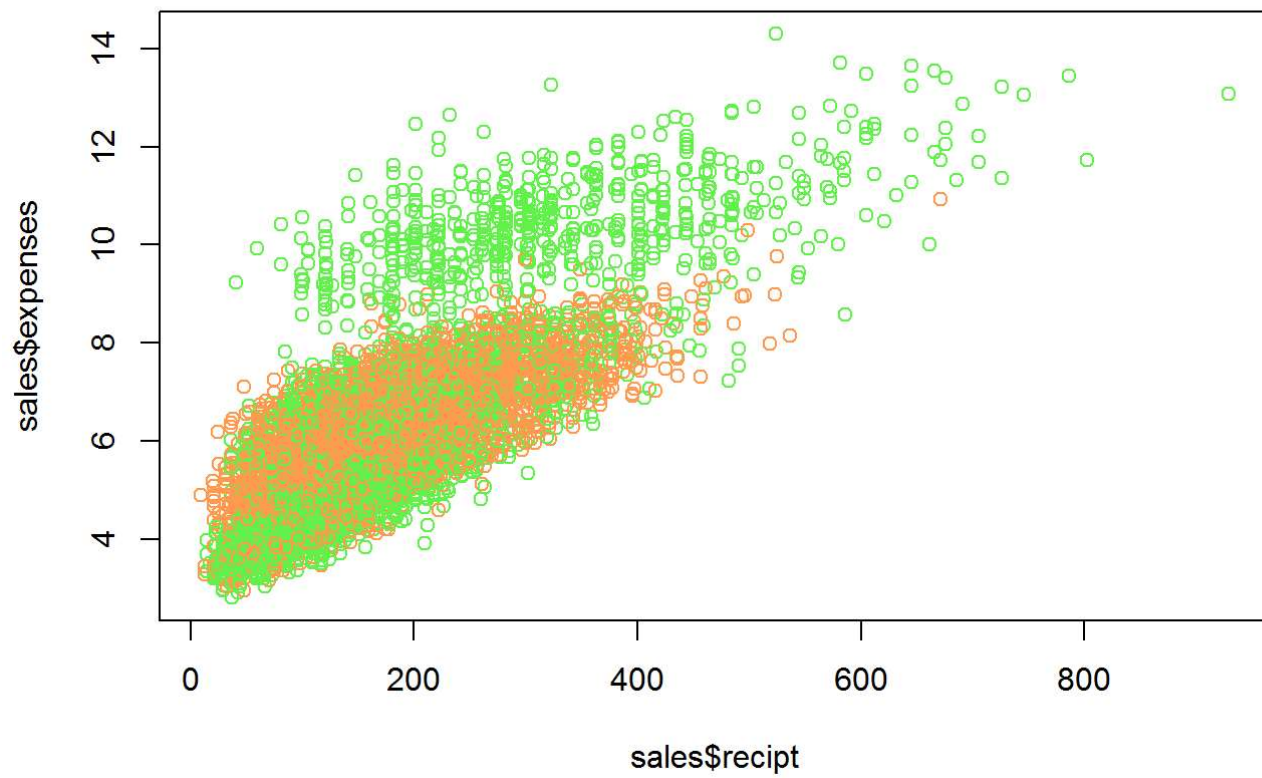
```
## [1] "X"           "sale.date"   "sales.rep"   "rep.sex"
## [5] "rep.region"  "rep.feedback" "wine"        "type"
## [9] "cost"        "unit.price"  "units.sold"  "receipt"
## [13] "expenses"    "year"
```

```
my.col = rep(col.1,dim(sales)[1])
my.col[sales$rep.sex==1] = col.2

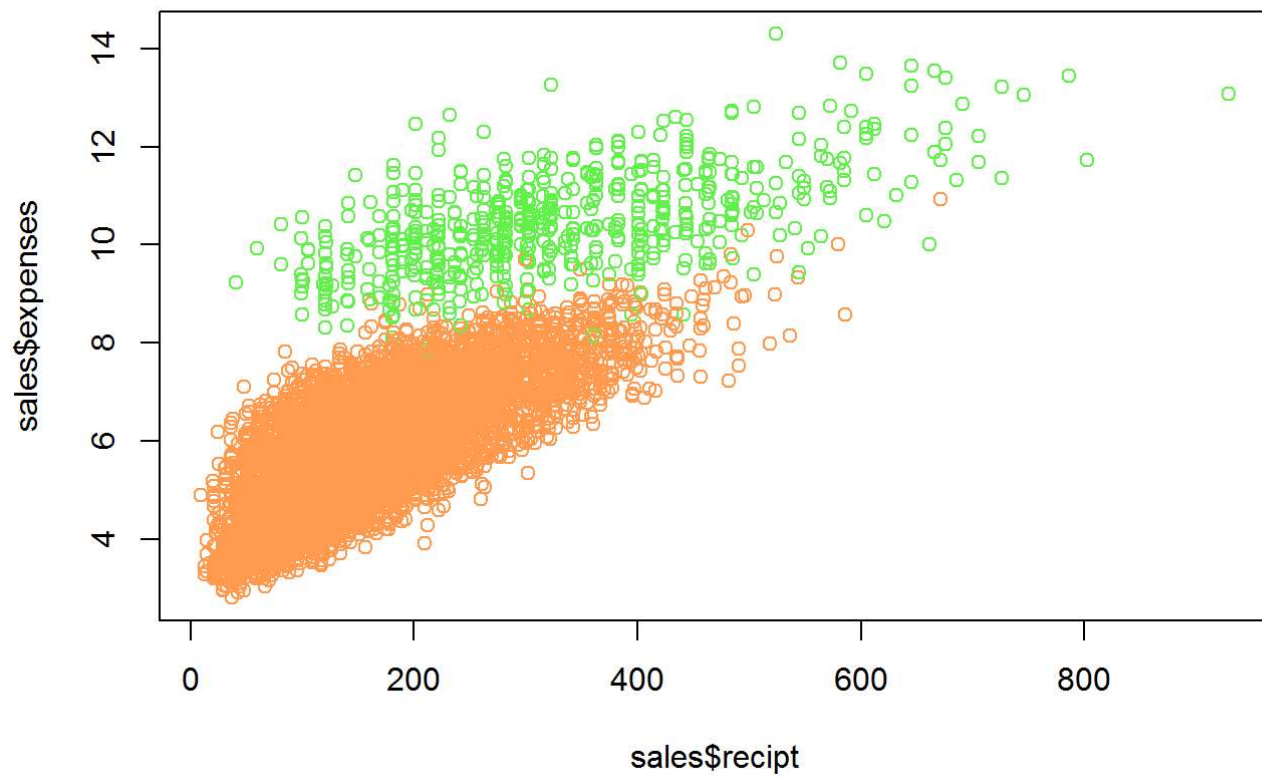
plot(sales$receipt, sales$expenses,col=my.col)
```



```
my.col = rep(col.1,dim(sales)[1])  
my.col[sales$type == "red"] = col.2  
plot(sales$receipt, sales$expenses,col=my.col)
```

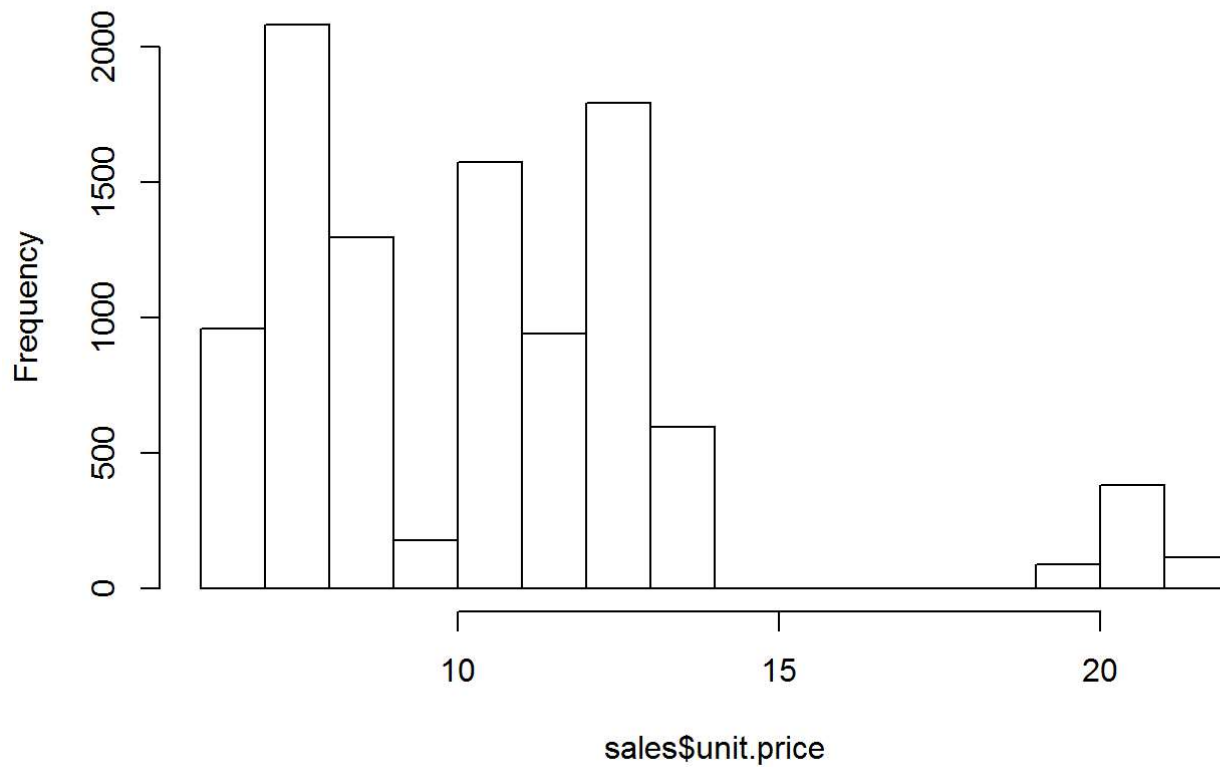


```
my.col = rep(col.1,dim(sales)[1])  
my.col[sales$unit.price > 14] = col.2  
  
plot(sales$receipt, sales$expenses,col=my.col)
```

```
hist(sales$unit.price)
```

Histogram of sales\$unit.price



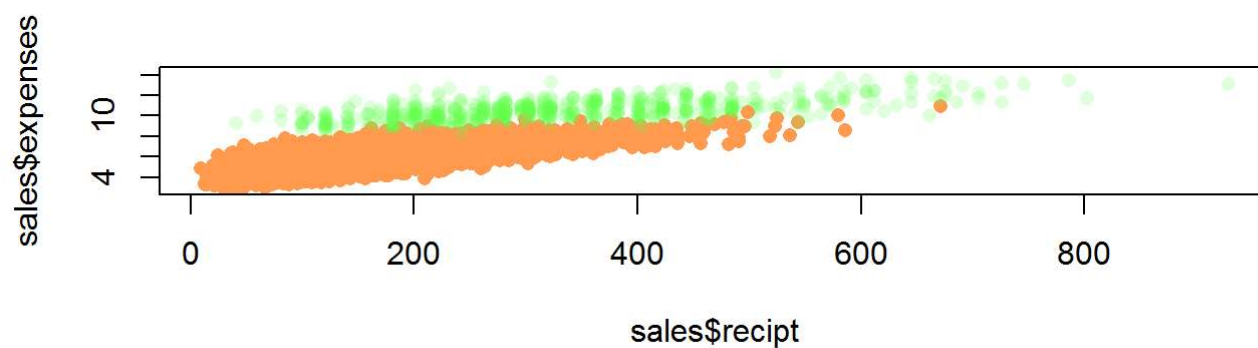
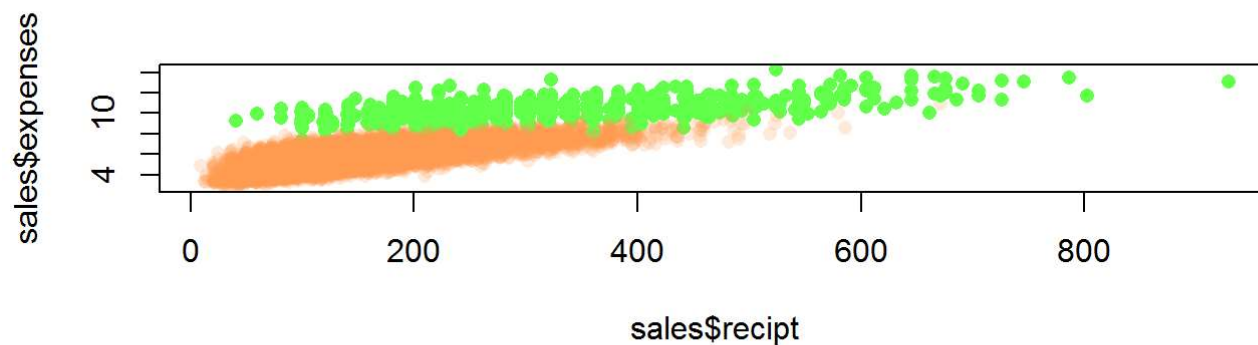
```
par(mfrow=c(2,1))

col.1= rgb(255,154,79,alpha =50,maxColorValue=255)
col.2= rgb(98,255,75,alpha =255,maxColorValue=255)

my.col = rep(col.1,dim(sales)[1])
my.col[sales$unit.price > 14] = col.2
plot(sales$receipt, sales$expenses,col=my.col, pch = 16)

col.1= rgb(255,154,79,alpha =255,maxColorValue=255)
col.2= rgb(98,255,75,alpha =50,maxColorValue=255)

my.col = rep(col.1,dim(sales)[1])
my.col[sales$unit.price > 14] = col.2
plot(sales$receipt, sales$expenses,col=my.col, pch = 16)
```



```
colnames(sales)
```

```
## [1] "X"           "sale.date"   "sales.rep"   "rep.sex"
## [5] "rep.region"  "rep.feedback" "wine"        "type"
## [9] "cost"        "unit.price"   "units.sold"  "recipt"
## [13] "expenses"    "year"
```

```
agg.data = aggregate(sales$units.sold, by =list(type=sales$type, wine = sales$wine),
                      FUN =sum)
```

```
agg.data
```

```
##   type      wine      x
## 1  red Cabernet Sauvignon 22236
## 2 white  Chardonnay 31962
## 3  red      Merlot 47315
## 4 white  Pinot Gris 22910
## 5 white  Riesling 10020
## 6 white  Sauvignon Blanc 13689
## 7  red      Shiraz 9616
```

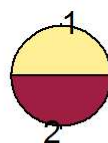
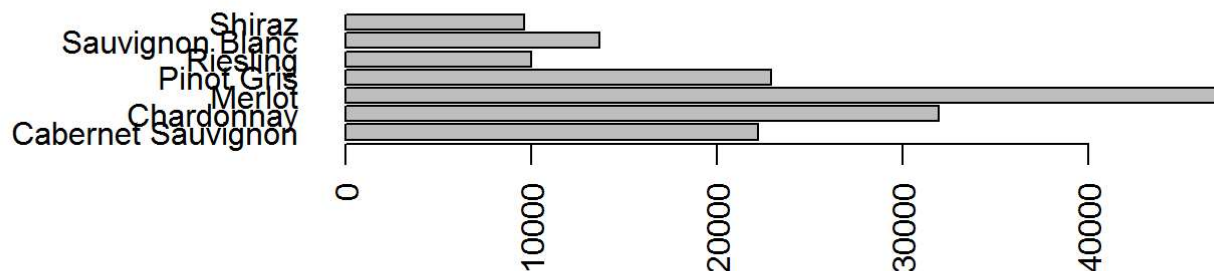
```

par(mar=c(5,10,4,2))
barplot(agg.data$x,names.arg = agg.data$wine, las=2,horiz = T)

wine.colors = c(rgb(255,240,150,maxColorValue = 255),
                 rgb(160,30,65, maxColorValue = 255))

pie(c(10,10), col= wine.colors)

```



```

wine.colors = c(rgb(255,240,150,maxColorValue = 255),
                 rgb(160,30,65, maxColorValue = 255))

bar.colors = rep("blue",nrow(agg.data))
bar.colors[agg.data$type=="red"] = wine.colors[2]
bar.colors[agg.data$type=="white"] = wine.colors[1]

barplot(agg.data$x, names.arg = agg.data$wine,
        las=2,
        horiz=T,
        col=bar.colors)

#####
#working with images in plots
#
#####
library(png)

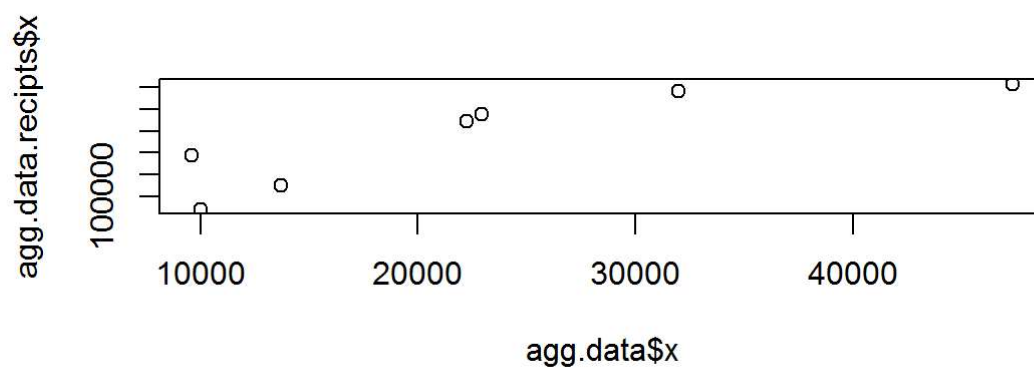
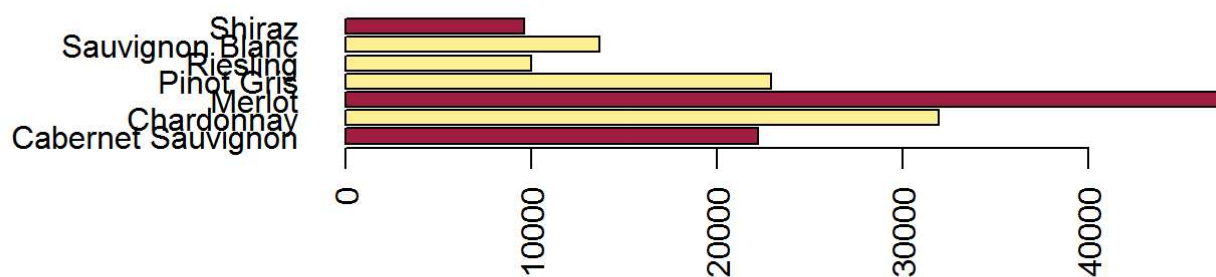
```

```
## Warning: package 'png' was built under R version 3.3.2
```

```
agg.data.recpts = aggregate(sales$receipt,  
                             by = list(type= sales$type,  
                                         wine = sales$wine),  
                             FUN = sum)  
  
agg.data.recpts
```

```
##      type      wine      x  
## 1  red Cabernet Sauvignon 271360.83  
## 2 white      Chardonnay 339936.68  
## 3  red      Merlot 356437.13  
## 4 white      Pinot Gris 288102.29  
## 5 white      Riesling  71517.98  
## 6 white  Sauvignon Blanc 124721.74  
## 7  red      Shiraz 194939.16
```

```
options(scipen =9 )  
#show scientific numbers for number after 9  
ima = readPNG("\\\\hd.ad.syr.edu\\03\\adf085\\Documents\\bottles.png")  
  
r1 = readPNG("\\\\hd.ad.syr.edu\\03\\adf085\\Documents\\R1.png")  
w1 = readPNG("\\\\hd.ad.syr.edu\\03\\adf085\\Documents\\W1.png")  
  
pch= rep("W",7)  
pch[agg.data$type== "red"] = "R"  
plot(agg.data$x, agg.data.recpts$x)
```



```
colnames(agg.data)[3]= "units"
agg.data$receipt = agg.data.recipits$x
agg.data
```

```
##   type      wine units  receipt
## 1  red Cabernet Sauvignon 22236 271360.83
## 2 white      Chardonnay 31962 339936.68
## 3  red          Merlot 47315 356437.13
## 4 white      Pinot Gris 22910 288102.29
## 5 white          Riesling 10020 71517.98
## 6 white Sauvignon Blanc 13689 124721.74
## 7  red          Shiraz 9616 194939.16
```

```
#par(mar = c(5.1,4.1,4.1,2.1))
plot(agg.data$units, agg.data$receipt,pch =pch,col=bar.colors,
     bty = "n", xlab ="units sold", ylab= "Receipts",
     xlim=c(0,1.25*max(agg.data$units))
     ,ylim=c(0,1.25 * max(agg.data$receipt))
     , main ="units sold by receipts", adj =0)

lim = par()
rasterImage(ima,lim$usr[1],lim$usr[3], lim$usr[2],lim$usr[4] )

rect(lim$usr[1],lim$usr[3], lim$usr[2],lim$usr[4] , col = rgb(1,1,1,.85),
     border="white")

r1.x1 = agg.data$units[agg.data$type == "red"]
r1.x2 = r1.x1 + 3000
r1.y1= agg.data$receipt[agg.data$type == "red"]
r1.y2 = r1.y1 +65000

rasterImage(r1,r1.x1, r1.y1,r1.x2,r1.y2)

w1.x1 = agg.data$units[agg.data$type == "white"]
w1.x2 = w1.x1 + 3000
w1.y1= agg.data$receipt[agg.data$type == "white"]
w1.y2 = w1.y1 +65000

rasterImage(w1,w1.x1, w1.y1,w1.x2,w1.y2)

text(agg.data$units +2000, agg.data$receipt,
     labels = agg.data$wine, adj =0, cex =1.2)

#mtext = margin text
#text = plot text
```

